



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY

M/035/002

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DIVISION OF
OIL, GAS AND MINING

Michael O. Leavitt
Governor

Dianne R. Nielson, Ph.D.
Executive Director

Don A. Ostler, P.E.
Director

MEMORANDUM

TO: Pamela Grubaugh-Littig

THROUGH: Don Ostler *DO*

FROM: Dan Hall/Dennis Frederick *Dan Hall / Dennis Frederick*

DATE: November 27, 2000 *JP*

SUBJECT: Review of Mine Closure Plan for the Bingham Canyon Mine and Leach Collection System, Ground Water Discharge Permit-No. UGW350010.

The Division of Water Quality (DWQ) has reviewed the Mine Closure Plan for the Bingham Canyon Mine and Leach permit, submitted as a required compliance schedule item under Part I, section K(3) of the above referenced Ground Water Permit. In order to facilitate a more timely, coordinated and efficient response, and as requested by Kennecott, the DWQ has been coordinating its review of the mine closure plan with the Division of Oil, Gas and Mining (DOGM). After several meetings with DOGM, it has become clear that, while still very important, the water quality issues associated with the mine closure plan are a smaller portion of the overall mine closure plan review comments. It has therefore been decided to draft a single letter to KUC incorporating our comments into the DOGM letter. A meeting with KUC is anticipated after receiving the combined review letter to discuss the changes. Ultimately, a single, comprehensive closure plan that satisfies both DOGM and DWQ requirements is envisioned. Kennecott is supportive of this idea since it will simplify and clarify the issues with both agencies and remove uncertainties and possible redundancies.

The currently proposed Mine Closure Plan cannot be approved for the following reasons:

Bingham Canyon Open Pit

The Plan states a "preferred alternative" to allow the pit to flood to an undetermined level. However, according to the plan, the quality of the pit water likely will "not meet water quality standards acceptable for irrigation water, drinking water or discharge to surface waters and also exceeds water quality standards for the principal aquifer in the southwestern Jordan and Tooele valleys" and "Allowing the pit to fill with water of this quality also may create an area of high pressure with water quality which is unacceptable for recharge into the aquifer." The high pressure head generated by the pit lake could also serve to move poor quality water near the east side leach and Dry Fork areas into the principal aquifer at a higher rate. Therefore, the best alternative with respect to minimizing future effects on surrounding water quality would be to keep the pit dewatered. Accordingly, a table needs to be provided describing all of the flows in and around the mine (i.e., shafts, tunnels, wells, storm water etc.) which includes the estimated flow and water quality of each source. The table must also include the ultimate disposition of the water, e.g. treatment or

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discharge, and assume that the pit will remain dry. Any possible effects on the tailings line and impoundment from all sources such as Dry Fork, the Jordan Valley remediation project and any other source of acid rock drainage must be evaluated and discussed. The closure plan gives a pump rate for the Dry Fork plume, however the final corrective action for this plume is currently under review and has not been accepted. The necessary pump rate for containment of this plume has not yet been determined.

Waste and Leach Dumps

The preferred alternative stated in the plan does not provide for reclamation of the waste rock dumps, even though this is not protective of ground water in the area. The "recommended alternative action" discussed in the plan, slope reduction, reclamation and vegetation to minimize infiltration, will provide much greater protection of ground water. A list prioritizing the reclamation of the dumps must be included in the closure plan revision. This would be most easily displayed in a large map of the dumps and the appropriate color coding of the dumps related to their estimated time of reduction and re-vegetation. The map should also include a table with the dump name and estimated date of reclamation. The rationale for the prioritization must be described in the text of the closure plan. The final estimated footprint of the dumps must also be included in the revision. A time-line with major milestone dates should also be included in the re-submittal. The time line should include the reclamation activities described in the plan and major time points in the mine operation such as the end of open pit mining, beginning of underground block caving, when such decisions may be made and closure dates of the mine with and without underground mining.

National Historic Registry

A complete discussion of the reasons and implications of the Bingham Canyon Mine being placed on the National Historic Register must be provided. The precise area covered by the listing must also be included.

DH:DO:FP:bjr

cc: Dianne Nielson
Fred Nelson
Wayne Hedberg

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M/035/002

RESOURCE ROUNDTABLE

Kennecott Utah Copper Corporation

Wednesday, November 15, 2000
9:30 am - 4:00 pm

Saltair Resort

Summary Report

Prepared by:
Michele Straube, Facilitator
CommUnity Resolution, Inc.
2915 E. Oakhurst Drive
Salt Lake City, Utah 84108
(801)583-6362; mstraube@inquo.net

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